



LONG RANGE RESEARCH PLAN



**Linda Jones
Northwest Fisheries Science Center
NOAA Fisheries Service
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- **Potential Factors of
POPULATION DECLINE**
- **DATA GAPS**
- **ONGOING RESEARCH**



Potential Factors of POPULATION DECLINE

- **Reduction in prey abundance, quality or availability**
- **Exposure to toxic contaminants**
- **Noise or disturbances from vessel traffic**
- **Population structure**
- **Other factors – e.g., oil spills**



DATA GAPS

- **Taxonomy/Genetic Relationships**
- **Winter Distribution**
- **Prey Identification**
- **Habitat Needs/Use**
- **Environmental Conditions**



ONGOING RESEARCH

- **Annual Population Census**
- **Population Dynamics**
- **Differences Between Pods**
- **Improvement of Research Techniques/Technology**
- **Information Management/Retrieval Systems**
- **Public Education**
- **Monitoring Effectiveness of Management Actions**



SRKW Workshops

- **Vessel Interactions: May 7-9, 2003**
- **Prey Relationships: May 13-14, 2003**
- **Research Plan: January 19-23, 2004**
- **Behavioral Studies : April 20, 2004**
- **Cetacean Taxonomy April 27-May 2, 2004**

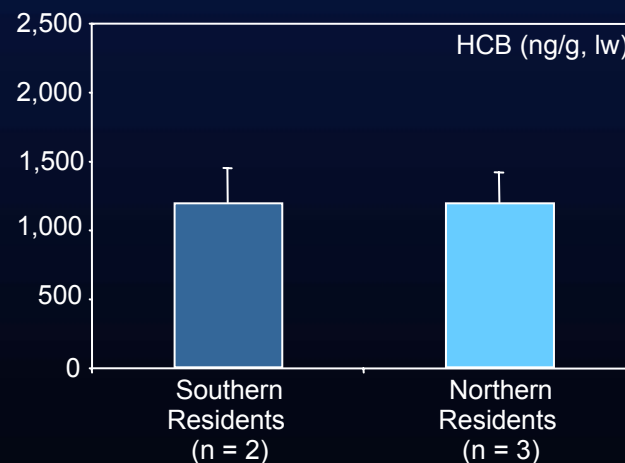
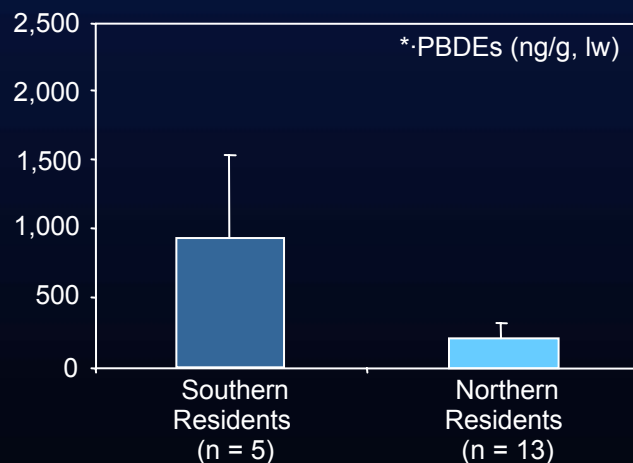
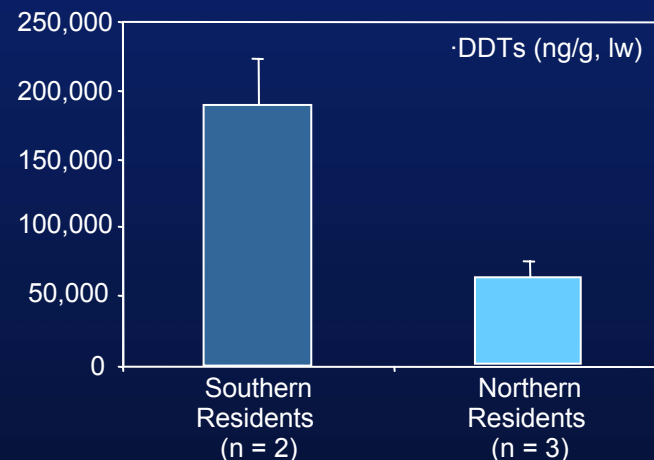
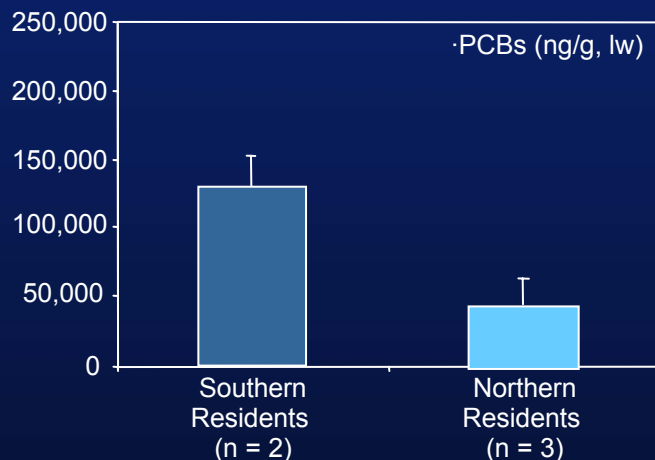
<http://www.nwfsc.noaa.gov/research/divisions/sd/kwworkshops/index.cfm>

<http://swfsc.nmfs.noaa.gov/publications/swfsc04.htm>



POPULATION DECLINE - Contaminants:

Levels of POPs in blubber of adult male resident whales

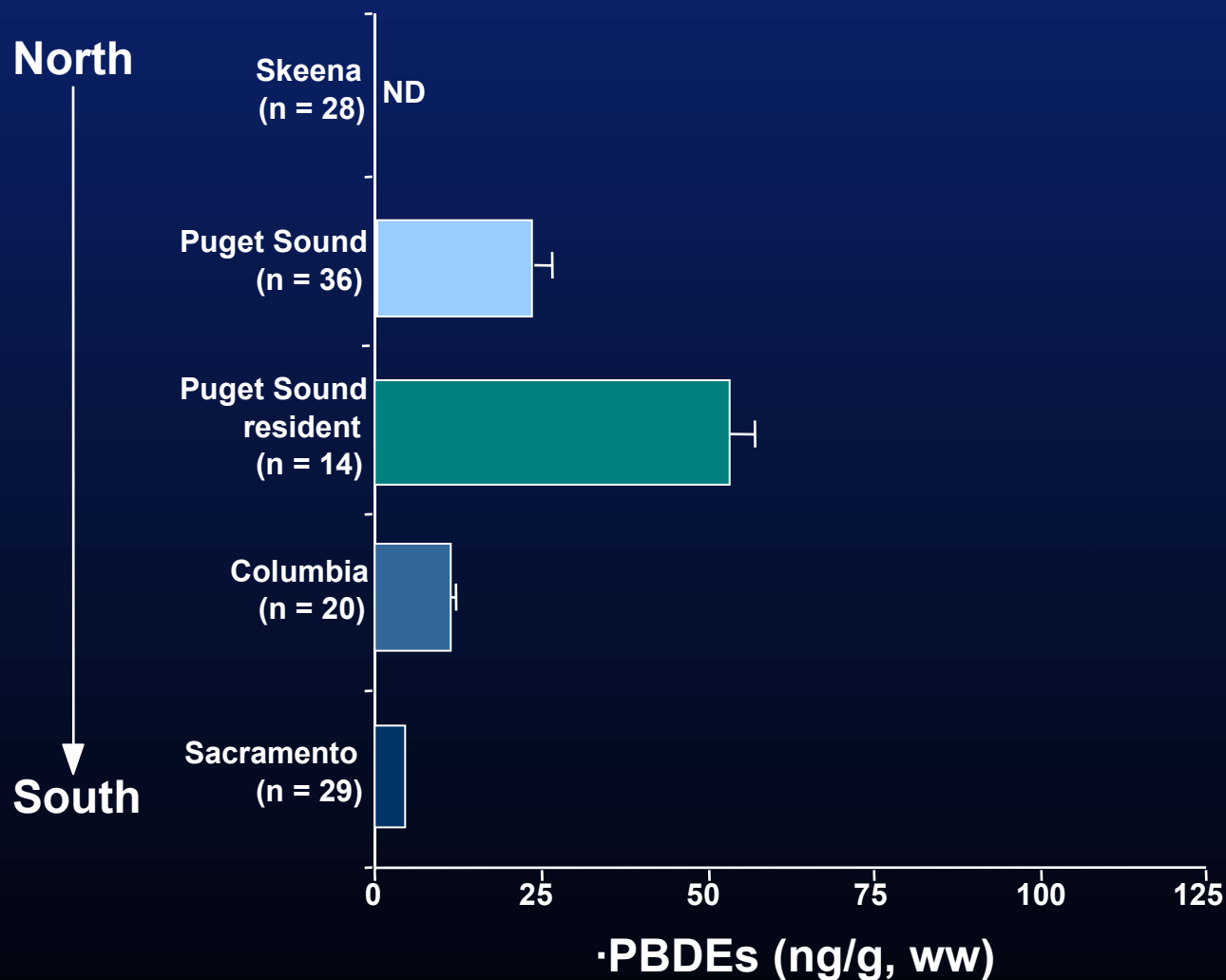


*Data from Rayne *et al.*, 2004,
Environ. Sci. Technol. 38:4293-4299



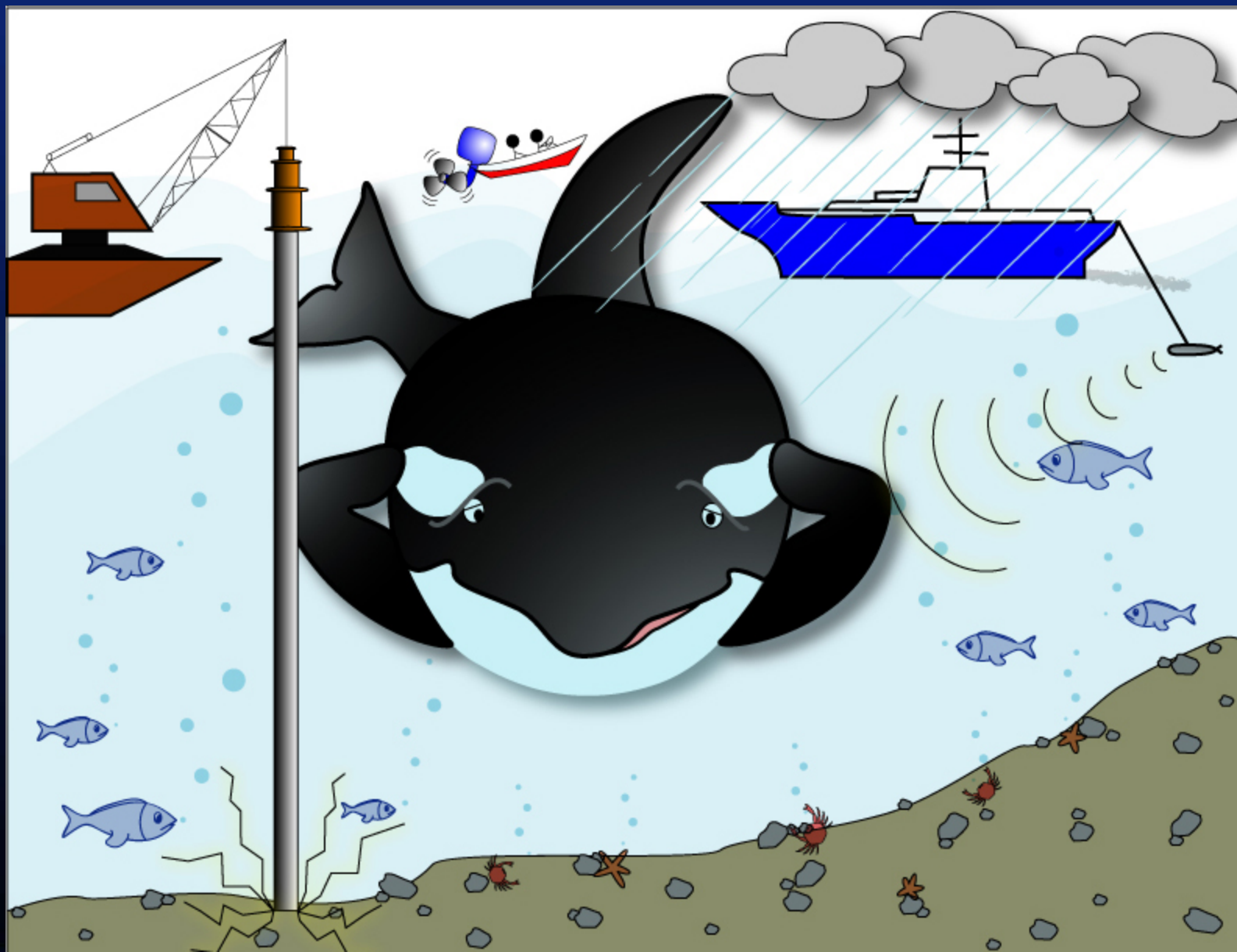
POPULATION DECLINE - Contaminants:

ΣPBDEs measured in whole body samples of Chinook salmon





POPULATION DECLINE - Noise Effects:





POPULATION DECLINE - Noise Effects: Energetic Costs?

If



Or



Or



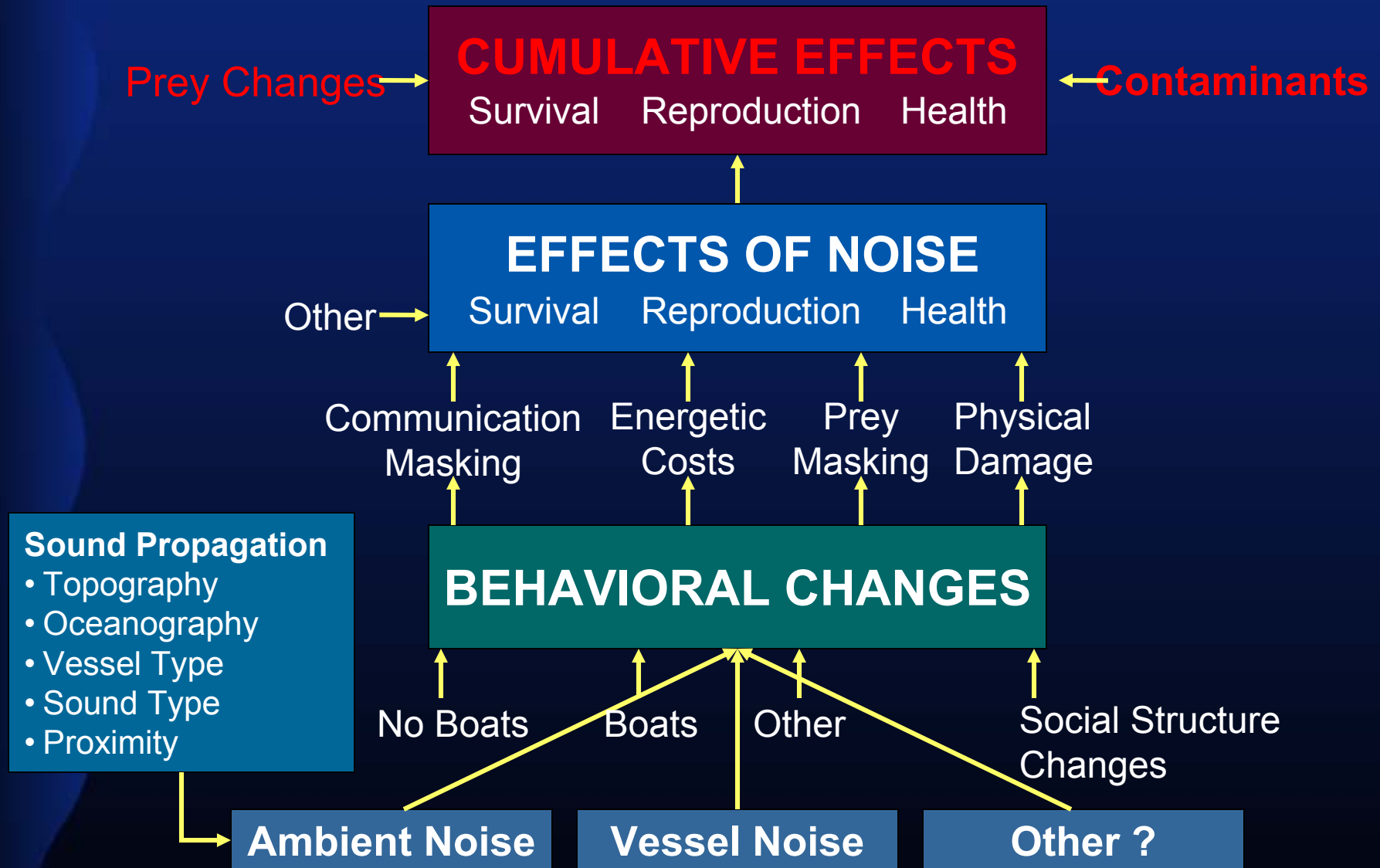
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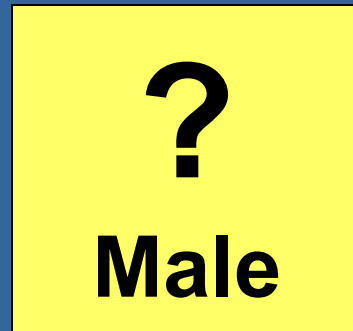




NOISE EFFECTS



Data Gaps: Paternity & Gene Flow



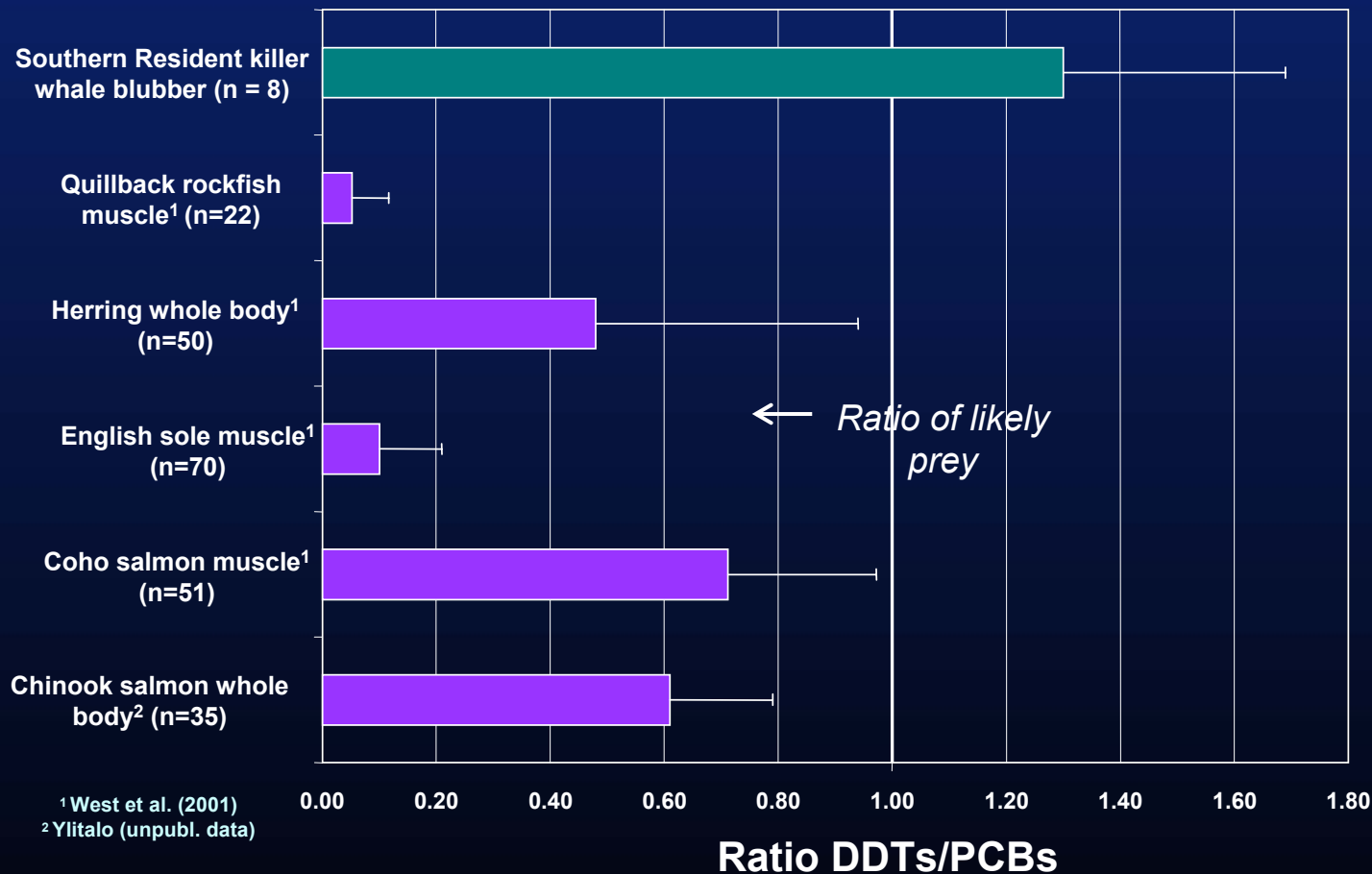


DATA GAPS: Winter Distribution



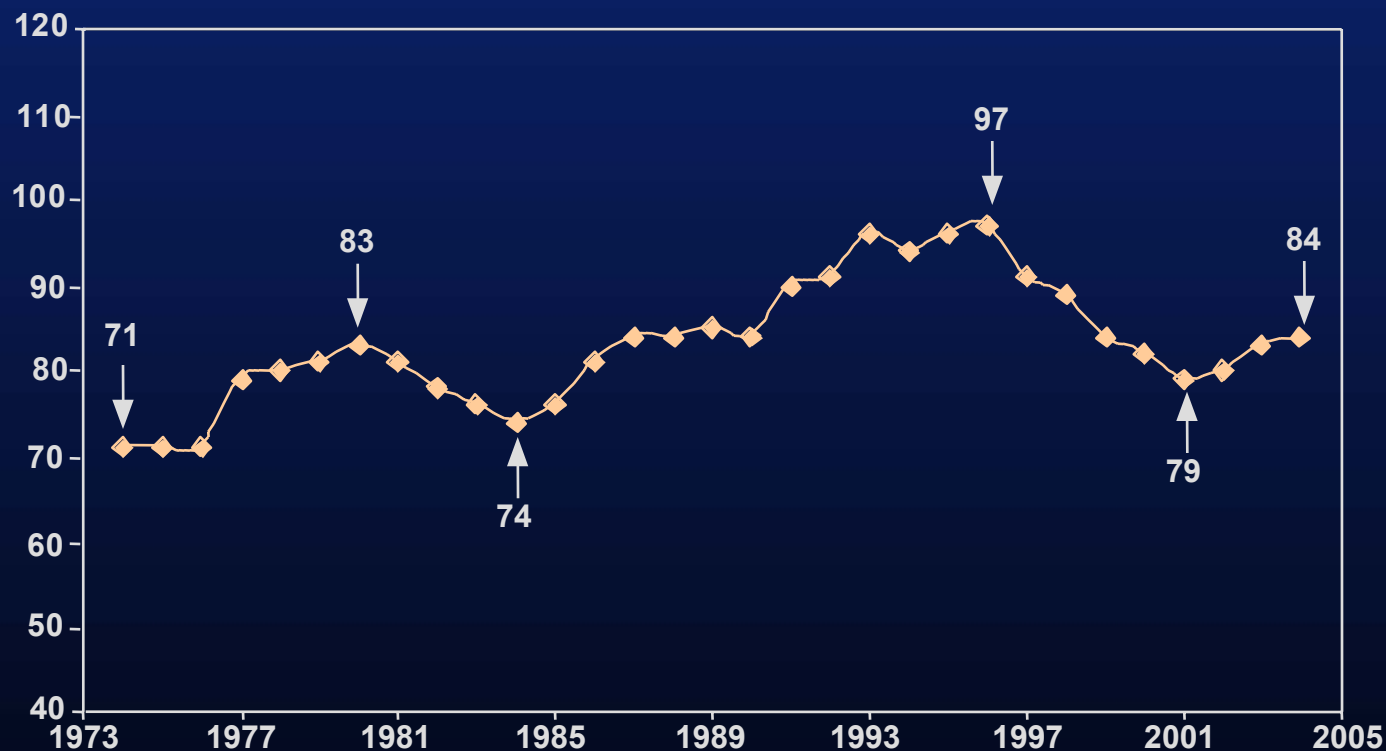


DATA GAPS - Prey Identification: Use of Contaminant Ratios

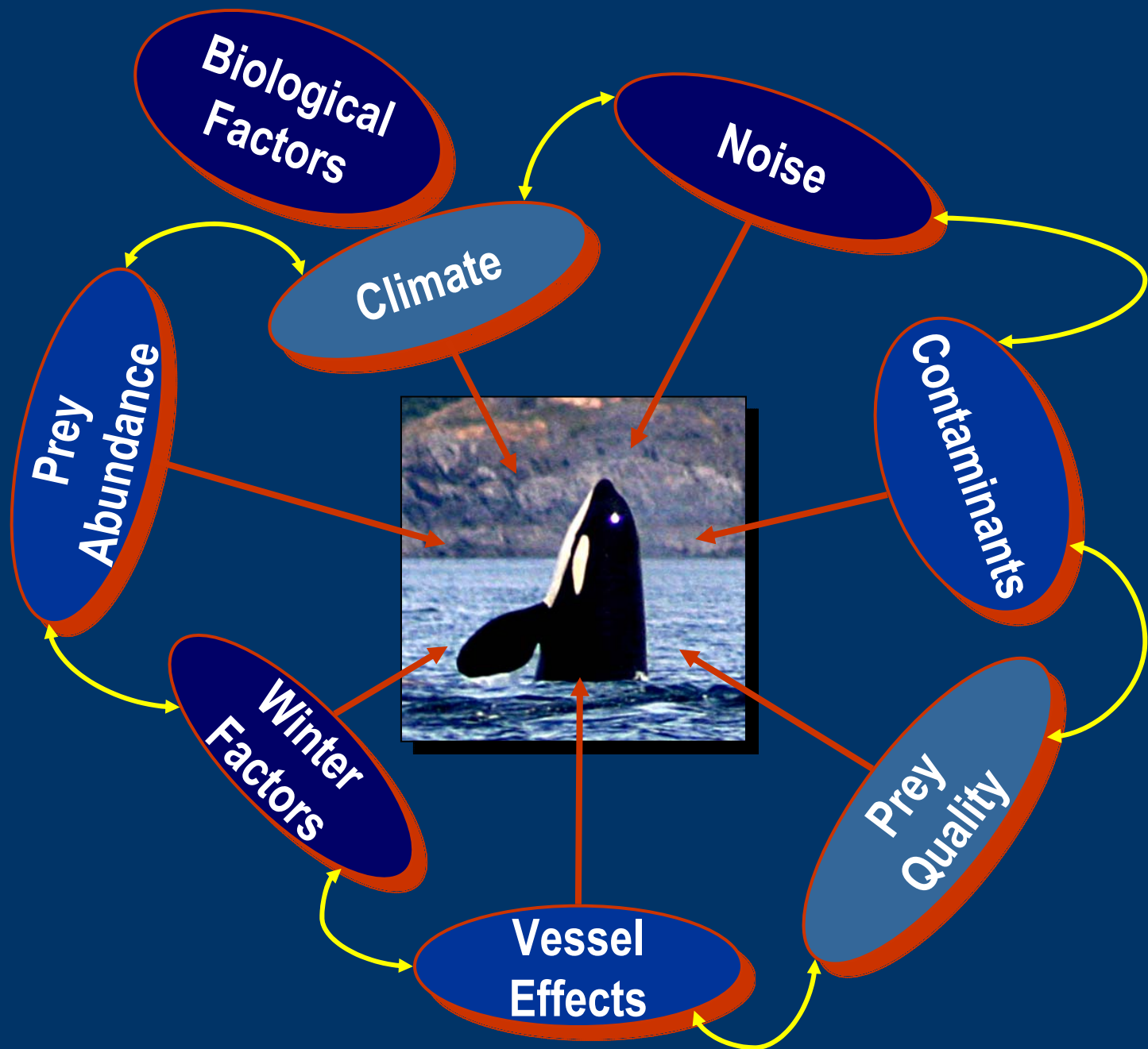




ONGOING RESEARCH - Annual Census: **Southern resident killer whale population size,** **1974 - present**



Data from the Center for Whale Research





RESEARCH PLAN SCHEDULE

Planning Workshop	January 2004
Workshop report completed	April 2004
Plan preparation	May-November
Editing completed	January 2005
Internal review	January-February
Revision	February
Peer review	March
Final Plan	April



Acknowledgements

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